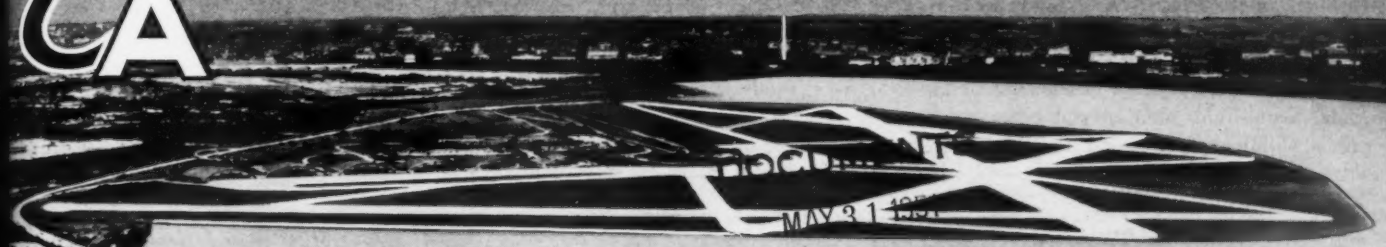
CAA JOURNAL



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Progress of Civil Aviation Greatest in Last 5 Years

The most encouraging factor in civil aviation's progress in the past 25 years is that the greatest amount of progress occurred in the last five, Donald W. Nyrop told the Chamber of Commerce of Los Angeles, Calif., in one of his last official addresses as Administrator of Civil Aeronautics prior to assuming Chairmanship of the Civil Aeronautics Board. "If we can maintain the present rate of advance, then in five more years our 1951 state of development will look as outmoded as the 1926 conditions appear to us today," he declared.

In discussing the air carriers, Mr. Nyrop pointed out that in 1926 the domestic scheduled airlines of the United States carried a grand total of 5,782 passengers, by 1945, the figure had reached approximately 7,600,000, but during the next 5 years almost 10 million passengers were added, making a total of 17,300,000 in 1950.

In 1928, only 1,400 passengers were carried in U. S. international operations, which meant for the most part, trips to such nearby places as Cuba. By 1945, more extensive routes were served and the number of passengers went up to 493,000. In the next 5 years, however, the number of international passengers more than tripled, reaching 1,676,000 in 1950.

The volume of air freight before 1935 was too tiny to record, Mr. Nyrop said. In that year, domestic air express and freight ton-miles totaled a little over 1 million. The total worked up to 22 million in 1945, but by 1950, the figure for the passenger-carrying airlines alone had zoomed past the 150 million ton-miles mark.

Accident Rate Decreased—"These tremendous increases in volume have been accompanied by, and to a considerable extent stimulated by, equally remarkably advances in safety and regularity," the Administrator said. "In 1930, there were 28 fatalities for every 100 million passenger miles flown by the U. S. domestic airlines. In 1950, this rate had been chopped to only 1.2 fatalities for every 100 million passenger miles. That means I was safer taking an airliner for my trip here than I would have been driving my car."

In discussing the part played by the Federal airways in contributing to civil aviation's progress, Mr. Nyrop said that "the other great deterrent to air travel in past years—uncertainty that you would complete your trip on schedule—is just about whipped. In 1926, navigation aids consisted largely of rivers and railroad tracks—and you flew only when weather allowed you to see them. Experimental work was being done on a radio range that would send out four low-frequency beams to guide flyers, but this daring idea was still a couple of years from a practical realization. We had 2,000 miles of so-called Federal airways, their chief equipment being beacon lights.

Omni-Range Installed—"Today, we have more than 70,000 miles of airways, along which many wondrous products of our electronic age help speed the air traveler swiftly and surely to his destination. The nine low-frequency ranges put in on a trial basis in 1929 grew to more than 300, but already are yielding to something better—the very-high frequency, omnidirectional range. We have commissioned 297 of these new facilities.

(Continued on page 52)

Next Issue to Feature Anniversary of CAA

The next issue of the Civil Aeronautics Journal will be devoted largely to the twenty-fifth anniversary of establishment of the Civil Aeronautics Administration.

The CAA had its origin with the passage of the Air Commerce Act in 1926, which authorized the Department of Commerce to regulate and foster air commerce.

The anniversary issue of the Journal will present a review of significant events which have marked the quarter-century of progress in aeronautics. Among the features will be a pictorial presentation giving a "Then and Now" comparison to show advances made during the twenty-five-year period.

CAA Personnel Help to Redesign Bolivian Airports

The longest runway in the world, at the world's highest airport, is in the making at La Paz, Bolivia, with the help of a Civil Aeronautics Administration mission from the United States.

La Paz has already sent its thanks to CAA for its assistance in the design of the airport. Don Federico Nielson Reyes, member of the Council of the Bolivian city, last month presented "a vote of applause, appreciation and recognition" to D. W. Nyrop, then Administrator of Civil Aeronautics, and honorable mention to A. S. Koch, Administrator of CAA's International Region (the mission's headquarters), and Pietro Vigna, chief of the mission to Bolivia.

Lying at 13,400 feet altitude, "El Alto," the La Paz municipal airport, is being redesigned to increase its runway to 16,000 feet in order to better accommodate transport planes.

At Trinidad, down in the lowlands of Bolivia, the CAA mission is helping with a contrasting problem. There, engineers must build runways of clay so slick in wet weather as to be unusable. Since there is no rock or gravel nearby, the airport builders must bake clay bricks and break them up to stabilize the slippery clay used in the runways.

Air Transportation Developed.—These two airports symbolize Bolivia's aviation problems, according to Mr. Vigna. "Bolivia, like other South American republics," said the chief of the mission, "is moving from muleback to the airplane in its transportation history. As in Alaska, the construction of roads generally will prove too expensive, and the airplane is being accepted gladly and its uses vigorously developed by the government."

Bolivia has 36 airports, 32 of which are virtually landing strips. The principal fields, at La Paz, Cochabamba, Santa Cruz and Sucre, take care of the major part of international air traffic, but many more are needed for full development of the country. In particular, airports are needed throughout the lowlands where, in the tropical climate, everything grows generously. Already three companies are engaging in flying meat from lowland farms to the cities in the mountains.

(Continued on page 51)

1951 Federal Funds for Airport Aid To Be Spent on Essential Defense Items

The bulk of the 1952 Federal funds for airport aid is expected to be spent on the improvement of airports essential to defense, Donald W. Nyrop said in an address before the Airport Operators Council in Memphis, Tenn., late last month.

Pointing out that a large percentage of the 1951 fiscal funds were allocated for runways, land acquisition, lighting and other similar items, while there was a sharp reduction in terminal building projects and small field construction, he said "The reasoning behind this policy is sound. It is obvious that our terminal type airports would play an extremely important role as an adjunct to the military fields in the event of an attack. In fact they could be the key to our defense during a critical period since they ring the country as well as being evenly distributed throughout the interior."

A further reason given by Mr. Nyrop for spending the funds on terminal type airports was that they are the centers of the most congested traffic, and are being improved for all-weather operation.

"Federal funds have been going into these large centers of air traffic from two directions," he said—"the airport funds to improve the airports to better handle the traffic and from our Office of Federal Airways for the necessary all-weather air navigation equipment recommended by Special Committee 31 of the Radio Technical Commission for Aeronautics.

Landing Aids Included.—"The implementation of this program is absolutely essential in the defense program because it will provide not only the enroute navigation aids to get the aircraft from one place to another, but the landing aids such as precision and surveillance radar, instrument landing systems, and approach lights.

"This equipment must be installed to smooth out and separate the traffic, especially in periods of low visibility around our air terminals as well as enroute for both civilian and military operations."

While the accent on Federal spending is on the large airports, Mr. Nyrop said that the smaller fields have not been forgotten. "Whenever properly justified we are helping small cities in the development of their airports," he said. "They too have a place in defense. These small fields cannot take a jet or a four-engine transport aircraft but they are doing a tremendous defense job for the type of flying for which they are suited. I refer to the crop dusting, spraying and all types of industrial and agricultural aviation. Food is defense and so is clothing."

Mr. Nyrop discussed CAA's job of revising each year a National Airport Plan showing locations at which CAA believes airport construction or improvements should be undertaken. The Plan, he said, gives the requirements for the next 3 years and also provides the basis for the programming of funds when appropriations have been made.

"Work has been completed on the 1951 version of the Plan and here again emphasis has been placed on the national defense," Mr. Nyrop said. "In certain locations new airports have been included in the Plan to provide for civilian operations that formerly were conducted at military airports jointly with the armed services. In addition many civilian airports have been included to cope with the increased civil and military operations as a result of the present emergency."

Single Runway Policy.—"The 1951 Plan was also prepared in line with our single runway policy whereby Federal funds will only be granted for single runway construction except where the volume of air traffic requires more than one runway for simultaneous use."

In reviewing the accomplishments in the first 5 years of operation under the Airport Act, Mr. Nyrop brought out that 1,125 projects at 771 locations had been completed and that 427 projects representing $54,900,000 in Federal funds are under construction.

Mr. Nyrop commended the Airport Use Panel—the industry-government-military committee responsible for making recommendations for improving safety and relieving congestion of air traffic at airports—for their outstanding work in the past year. "In its first year of operation," he said, "the committee surveyed 10 different airports in all sections of the country and came up with recommendations in each case which solved many of the difficult problems that had been facing the airports for several years. We fully expect that this Panel will continue its excellent work throughout this year and as long as it is needed to solve the many difficult problems that are sure to come up as we go further into the defense effort."

New RTCA Report Available

The executive committee of the Radio Technical Commission for Aeronautics has accepted the report of its special committee 56, entitled "Communication Frequencies Required Within the Band 118.1--126.7 Mc During the Period 1951-53 Inclusive and Recommended Implementation Thereof". The report is identified as Paper 38-51/DO-31, dated March 26, 1951, and may be obtained from the RTCA secretariat, 1724 F Street, N.W., Washington 25, D. C. at a cost of 50 cents per copy.

Brimhall, CAA Research Chief, Retires from Federal Service

Dean R. Brimhall, Research Coordinator of the Civil Aeronautics Administration, retired from government service last month.

Dr. Brimhall first engaged in aviation activities in 1926, when he became general manager of Utah-Pacific Airways. Previously, he had taught psychology at Brigham Young University, his alma mater, and had been secretary-treasurer of the Psychological Corporation. This interest in the psychological or "human engineering" aspect of flying has dominated his career, and his contributions to knowledge in the field have been transplanted into many practical changes relating to pilots.

He entered government employ as Advisor on Labor Relations in the Works Progress Administration in 1935, and became Assistant to the Chairman of the Civil Aeronautics Authority in 1938.

In 1940, he was appointed Director of Research of the CAA. He established the CAA practice of contracting research projects to specialists, and worked closely with outstanding leaders in the field of aviation psychology.

Pointing to the cash value of research, Dr. Brimhall recently noted that reduction in the CAA's requirements for medical examination of private pilots—for which he fought consistently—has saved private pilots an estimated million dollars a year, and removed an obstacle which kept many from flying. His work in proving the value of a simple stall-warning device—one of his contributions to safety—eliminated many stall accidents.

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CAA JOURNAL

DEPARTMENT OF COMMERCE
Charles Sawyer, *Secretary*

Civil Aeronautics Administration
Charles F. Horne, *Administrator*

Ben Stern, *Director*
Office of Aviation Information

Issued on the 20th of each month by the Office of Aviation Information. Subscription 75 cents a year in the U. S. and Canada. Foreign countries, $1.00. Sold by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. The printing of this publication has been approved by the Director of the Bureau of the Budget, June 29, 1949.

Increase During January Noted In Aircraft Engine Shipments

During January 1951, the civil aircraft engine industry shipped 437 engines, representing 181,100 horsepower, valued at $2,228,000, according to a report issued jointly by the Civil Aeronautics Administration and the Bureau of the Census, Department of Commerce. Shipments to civil customers during January 1950 totaled 266 engines, representing 140,200 horsepower, valued at $1,804,000.

Shipments and employment figures for plants manufacturing aircraft engines follow:

Shipments and Employment by Plants Manufacturing Aircraft Engines [1]

Item	1951 January	3-months average; November and December 1950 and January 1951 [2]	1950 January
	AIRCRAFT ENGINE SHIPMENTS (Horsepower figures in thousands)		
Total horsepower of civil engines	181.1	172.1	140.2
Number of civil engines	437	384	266
	1951 January	1950 December	1950 January
	SHIPMENTS OF CIVIL AIRCRAFT ENGINES AND OTHER PRODUCTS (Thousands of Dollars)		
Total value of shipments by aircraft engine plants	$7,243	$6,677	$5,312
Civil aircraft engines and parts	6,534	6,517	5,101
Aircraft engines	2,228	2,627	1,804
Engine parts	4,306	3,890	3,297
All other products	709	160	211
	NUMBER OF EMPLOYEES IN AIRCRAFT ENGINE PLANTS		
Total employees	53,106	50,638	40,231
Production and related workers	38,670	36,729	28,267
Other employees	14,436	13,909	11,964

[1] Shipments of complete aircraft and parts for United States military customers are not included in this release.
[2] Three-months moving average.

Conduct of Practitioners Is Subject Of Board's Procedural Regulations

The Civil Aeronautics Board last month adopted a codification of the principles of practice which serve as a guide to all parties and to the Board and its staff in formal proceedings before the Board.

The new procedural regulation, designated as Part 300, is the result of an action taken in December 1950, when the Board appointed from the aviation industry the Civil Aeronautics Board Advisory Committee on Practices and Procedures. The principles of conduct, modified and adopted by the Board, were the subject of considerable discussion between the Advisory Committee on Practices and Procedures and the Board in an effort to preserve the quasi-judicial character of Board actions and to make definite in written form the rules of conduct by which all persons having business with the Board are governed.

The Board emphasized that these principles of practice will serve the same purposes for the Civil Aeronautics Board as are sought by the Canon of Ethics adopted by the practitioners appearing before the Interstate Commerce Commission and other regulatory agencies.

Standards of Conduct.—The Board stated that those who are parties to cases coming before it are expected to conduct themselves with honor and dignity and that the Members of the Board and those of its employees who participate with the Board Members in the determination of cases are expected to conduct themselves with the same fidelity to standards of propriety that characterizes a judicial court and its staff. The Board pointed out that it is essential in cases decided after notice and hearing and upon a record, that the Board's judicial character be recognized and protected. Specifically, in such cases the Board's new procedural regulations stated:

"It is improper that there be any private communication on the merits of the case to a member of the Board or its staff or to the examiner in the case by any person, either in public or private life, unless provided for by law.

"It is likewise improper that there be any private communication on the merits of the case to a member of the Board or to the examiner in the case by any members of the Board's staff who participate in the hearing as witnesses or as counsel.

"It is improper that there be any effort by any person interested in the case to sway the judgment of the Board by attempting to bring pressure or influence to bear upon the members of the Board or its staff, or that such person or any member of the Board's staff, directly or indirectly, give statements to the press or radio, by paid advertisement or otherwise, designed to influence the Board's judgment in the case."

Precise Presentation.—The Board also stated that persons practicing before the Board should endeavor to present their cases in precise form, avoiding cumulative and repetitious evidence. The Board added that it is particularly improper that persons interested in cases before the Board should provide unusual hospitality to the Board or its staff; nor should such hospitality be accepted.

The CAB Advisory Committee on Procedures and Practices is composed of the following members:

Albert F. Beitel, Washington, D. C.; Gerald P. Brophy, New York City; Paul M. Godehn, Chicago, Ill.; Hamilton O. Hale, New York City; Edward J. Hickey, Jr., Washington, D. C.; William E. Miller, Washington, D. C.; L. Welch Pogue, Washington, D. C.; Hubert A. Schneider, Washington, D. C.; and Howard C. Westwood, Washington, D. C.

Bolivian Airports Redesigned

(Continued from page 49)

The field at La Paz handles about 25,000 passengers a year, and at Sucre, the capital of the country, the 10,000 foot elevation airport handles traffic resulting from the government offices and an oil refinery business centered there. No roads worthy of the name serve these 2-mile-high cities, and the country has but two small railroads.

In some instances, U. S. airliners using the La Paz field use jet assist units for take-offs. Airliners bound for Buenos Aires, forced by the altitude to carry light loads from this field, must refuel at Santa Cruz, making that field an important one.

Transportation of equipment to the site of the work is one of the principal problems in Bolivia, and it affects the planning and advice of the CAA mission. Large pieces, so designed that they can be knocked down for airplane transport and reassembled on the job, would be helpful, the CAA said.

In the lowlands, flooding rivers present the principal problems and make the planning of proper drainage and protection from floods a major task of the mission.

CAA and CAB Releases

Copies of CAA releases may be obtained from the CAA Office of Aviation Information. CAB releases are obtainable from the Public Information Section of the Board.

Administration

Alaska Resorts Accessible by Air Listed by CAA—(CAA 51-22) (April 9)

CAA Helps Bolivia With Variety of Airport Problems—(CAA 51-23) (April 22)

Commercial Pilot Examinations to Include Questions on Radio—(CAA 51-24) (May 3)

Address by Donald W. Nyrop, Administrator of Civil Aeronautics, to Los Angeles Chamber of Commerce, Los Angeles, Calif. (April 17, 1951), "25 Years of Civil Aviation Progress."

Address by G. R. Gaillard, Director, Office of Aviation Defense Requirements, American Association of Airport Executives, Hotel Radisson, Minneapolis, Minnesota (April 24, 1951), "Priorities for Maintenance, Repair and Operating Supplies for Civil Airports."

Address by Richard K. Waldo, Program Planning Staff, American Helicopter Society Annual Forum, Washington, D. C. (April 27, 1951), "Economic Prospects for Large Transport Helicopters."

Board

Gilbert L. Bates Appointed as Assistant to CAB Member Joseph P. Adams—(CAB 51-30) (March 29).

CAB Announces Principles of Practice—(CAB 51-31) (April 2).

CAB Denies Chicago and Southern Application for Chicago Co-Terminal—(CAB 51-32) (April 3).

CAB Tentatively Approves Through Service Agreements—(CAB 51-33) (April 13).

CAB Sets Hearing on Southwest Airways Fatal Accident Near Santa Barbara, Calif.—(CAB 51-34) (April 18).

Alaska Recreation Areas Accessible Only by Plane Described in CAA List

Tucked away in remote corners of Alaska are wonderful resort and recreation areas accessible only by airplane, and a list of such places now has been prepared by the Civil Aeronautics Administration.

The list gives the location of the area, what facilities are available for airplanes, either landplanes or seaplanes, accommodations and the prices charged, and the special attractions to visitors.

The CAA straddled the fence on one major item of the information. Spokesmen for many areas wrote that the "biggest Rainbow, Grayling, Dolly Varden and Mackinaw are caught here," and the CAA reproduced such claims as received. The fish can't be biggest at every place, the CAA knows, but it believes fishermen will understand.

Other attractions offered throughout the list include the panning of gold, (and even prospecting), impressive scenery, stream fishing in "Alaska's wildest area", mineral springs, hunting, photography and visiting native villages.

Rates range widely, and there are places where only a ranger's cabin exists and the vacationer must bring all his supplies. Some of the deluxe accommodations are $25 a day, but this rate "includes camp facilities, room, board and boats."

The CAA urges all flying visitors to check with local CAA agents in Alaska on the latest information, and, of course to file flight plans as all good pilots do in Alaska. Copies of the list are available from any CAA Regional Office, from CAA offices in Alaska, or from the CAA Office of Aviation Information, Washington 25, D. C.

CAB Denies C & S Application For Chicago to Havana Service

The Civil Aeronautics Board last month denied the application of Chicago & Southern Air Lines, Inc. to add Chicago, Ill., as a co-terminal point on its foreign air route between New Orleans and Havana, and points in the Caribbean area and South America. The Board's order was approved by President Truman on April 2, 1951.

In denying Chicago & Southern's application, which would have made possible nonstop service between Chicago and Havana, the Board said that the volume of traffic moving between these points will not support or warrant a nonstop operation, and that the saving in mileage in such nonstop service is not beneficial enough to the vacation traffic intended to be served to generate traffic necessary to support the operation.

Chicago & Southern's domestic route between Chicago and New Orleans now makes possible connecting service to Havana and south for international passengers. The Board pointed out that the proposal of Chicago & Southern would result in diversion from their other Havana schedules, and also from other carriers providing service via the Miami gateway, all of which could be expected to increase the mail pay to Chicago & Southern, and to some of the other carriers affected.

"After weighing all of the factors involved," the Board said, "including the benefits attributed to the proposal, we conclude that the public convenience and necessity does not require authorization of the nonstop operation."

Agricultural Planes Protect Forests

Over a million acres of Washington and Oregon forest land were sprayed last year to protect the trees from the spruce budworm.

CAM Supplements and Aviation Safety Releases

(Issued between March 17, 1951, and April 30, 1951, and obtainable from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.)

Aviation Safety Releases

No.	Date	Subject
343	3/20/51	ANC-23 Bulletin, "Sandwich Construction for Aircraft," Part I, February 1951.
344	3/29/51	Personal Aircraft Inspection Manual (CAA Technical Manual No. 101).

CAM Supplements

CAM No.	Supplement No.	Date	Title
6	1	4/ 3/51	Service Life of Auxiliary and Main Rotors.
33	2	4/ 9/51	Knowledge and skill.
18	1	4/16/51	Revisions to Manual 18
42	3	4/20/51	Revisions to Manual 42.

Progress of Civil Aeronautics Greatest in Last Five Years

(Continued from page 49)

"Where the old-type ranges required the pilot to listen continuously to a tone signal which was subject to static and interference, especially in bad weather, the new omniranges allow the pilot to hold a course simply by keeping a needle centered in a dial on his instrument panel. And where the old ranges transmitted four courses, with wide gaps between, the omniranges, as their name implies, send out signals around the compass.

"During the last five years, we have gone far toward eliminating cancellations and delays caused by traffic congestion or low ceiling and visibility at airports. From nine instrument landing systems in 1945 we have 96 today, making possible landings with ceilings, on an average, 300 feet lower. We have installed radar at eight locations, and find it most useful in speeding traffic in and out of airports. Improved approach control procedures and communications have made their contribution."

Mr. Nyrop pointed out the tremendous increases in other aviation activities in recent years. In 1940, he said, there were less than 18,000 civil aircraft and less than 70,000 civil pilots. Today there are 93,000 civil aircraft, the number of pilots have increased to 550,000, and the pilots are using the airplane as a utility vehicle in many diverse ways.

In the United States, small planes have been making notable contributions to our national economy, he said. Using the States of Oregon, Washington, Idaho and Montana as a case in point, Mr. Nyrop said "Almost 3 million acres of land in these states were chemically treated by aircraft operators last year. That meant 40,000 hours of flying time by 481 aircraft, which dispensed 19 million pounds of dust, 1,500,000 pounds of grasshopper bait, and 1,600,000 gallons of liquid." In addition, Pacific Northwest airplanes flew more than 30,000 hours on such missions as power pipeline patrols, engineering surveys, firefighting, and transporting doctors and other personnel to remote areas.

"The same pattern of intensive, varied activity can be found in every region," the Administrator said. "Civil aircraft, both small and large, have won an established place in our economy, no less in time of national emergency than in more normal times."

Air Regulations . . . . May 1, 1951

TITLE	No.	Price	Date	Number of Amendments	Applicable Special Regulations
AIRCRAFT					
Certification, Identification, and Marking of Aircraft and Related Products	1	$0.05	1/15/51		
Airplane Airworthiness; Normal, Utility, Acrobatic, and Restricted Purpose Categories	[1] 3	.15	11/ 1/49	5	SR-358,360
Airplane Airworthiness	4a	.20	4/ 7/50		SR-358,360
Airplane Airworthiness; Transport Categories	[1] 4b	.25	7/20/50	3	SR-358,360 361
Rotorcraft Airworthiness	6	.10	1/15/51		SR-358,360
Aircraft Airworthiness; Restricted Category	8	.05	10/11/50		
Aircraft Airworthiness; Limited Category	9	.05	11/11/49	1	
Aircraft Engine Airworthiness	13	.05	8/ 1/49	2	SR-358
Aircraft Propeller Airworthiness	14	.05	11/ 1/49	2	SR-358
Aircraft Equipment Airworthiness	15	.05	11/ 1/49	3	SR-358,360
Aircraft Radio Equipment Airworthiness	16	.05	2/13/41		
Maintenance, Repair, and Alteration of Certificated Aircraft and of Aircraft Engines, Propellers, and Instruments	18	.05	8/15/49		
AIRMEN					
Pilot Certificates	20	.05	8/ 1/49	7	
Airline Transport Pilot Rating	21	.05	8/15/49	2	
Lighter-than-air Pilot Certificates	22	.05	11/ 1/49	5	
Mechanic Certificates	24	.05	9/ 1 49	4	SR-348
Parachute Rigger Certificates	25	.05	9/ 5/50	1	
Air-traffic Control-tower Operator Certificates	26	.05	11/ 1/49	4	
Aircraft Dispatcher Certificates	27	.05	11/ 1/49	3	
Physical Standards for Airmen	29	.05	10/ 1/49	2	
Flight Radio Operator Certificates	33	.05	2/15/50	4	
Flight Navigator Certificates	34	.05	11/ 1/49	3	
Flight Engineer Certificates	35	.05	11/ 1/49	3	
OPERATION RULES					
Air Carrier Operating Certification	40	.05	9/ 1/49		SR-346, 349, 351, 353, 356
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	.05	11/15/49	3	SR-349, 356, 360, 362
Irregular Air Carrier and Off-Route Rules	42	.10	6/ 1/49	6	SR-337, 349, 350, 360
General Operation Rules	43	.05	8/ 1/49	5	SR-360
Foreign Air Carrier Regulations	44	.05	9/ 1/49		
Commercial Operator Certification and Operation Rules	45	.05	11/15/49	1	SR-337, 349, 356
Operation of Moored Balloons	48	.05	9/ 1/49		
Transportation of Explosives and Other Dangerous Articles	49	.10	7/20/49		
AIR AGENCIES					
Airman Agency Certificates	50	.05	10/ 1/49	2	SR-354,355
Ground Instructor Rating	51	.05	10/10/49	2	
Repair Station Rating	52	.05	10/15/49		
Mechanic School Rating	53	.05	10/15/49		
Parachute Loft Certificates and Ratings	54	.05	10/15/49	1	
AIR NAVIGATION					
Air Traffic Rules	60	.10	8/ 1/49		
Scheduled Air Carrier Rules	61	.10	9/ 1/49	4	SR-346, 349, 350, 356, 360
Notice and Reports of Aircraft Accidents and Missing Aircraft	62	.05	5/ 1/49		

[1] Certain aircraft may comply with the provisions of this Part or Part 4a.

NOTE: Civil Air Regulations are on sale at the prices indicated by the Superintendent of Documents, Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Amendments and special regulations may be obtained from the Publications Section, Civil Aeronautics Board, Washington 25, D. C.

CAA Manuals and Supplements . . . May 1, 1951

TITLE	No.	Price	Date	No. of Supplements	Amending Release
Production Certificates	02	$0.10	8/ 1/46		
Airplane Airworthiness; Normal, Utility, Acrobatic, and Restricted Purpose Categories	3	Free		6	
Airplane Airworthiness	04	.75	7/ 1/44		Nos. 193, 202
Airplane Airworthiness; Transport Categories	4b	Free		5	
Aircraft Airworthiness; Restricted Category	8	.60	1/ 1/51	1	
Aircraft Propeller Airworthiness	14	.20	5/ 1/46		
Aircraft Equipment Airworthiness	15			(Being revised)	
Aircraft Radio Equipment Airworthiness	16	Free	2/13/41		Nos. 62, 272
Maintenance, Repair, and Alteration of Certificated Aircraft, Engines, Propellers, and Instruments	18	1.25	8/ 1/49		
Pilot Certificates	20	Free	6/16/50	1	
Air-Traffic Control-Tower Operator Certificates	26	Free		3	
Aircraft-Dispatcher Certificates	27	Free		2	
Flight Radio Operator Certificates	33	Free	6/16/50	1	
Flight Navigator Certificates	34	Free		1	
Flight Engineer Certificates	35	Free	1/ 2/51	1	
Air Carrier Operating Certification	40	Free		3	
Certification and Operation Rules for Scheduled Air Carrier Operations Outside the Continental Limits of the United States	41	Free		11	
Irregular Air Carrier Certification and Operation Rules	42	1.00	9/ 1/49	2	
General Operation Rules	43	Free		2	
Airmen Agency Certificates	50	.15	5/15/46	3	No. 254
Repair Station Rating	52	Free		1	
Mechanic School Rating	53	Free	5/—/40		
Parachute Loft Certificates and Ratings	54	.15	7/ 1/48		
Instrument Approach Procedure	60	Free		5	
Scheduled Air Carrier Rules	61	Free		7	

NOTE: Manuals for which a price is listed may be obtained from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Remittances should be by check or money order, payable to the Superintendent. Items marked "free" may be obtained from the CAA Office of Aviation Information, Department of Commerce, Washington 25, D. C.

Official Actions . . . . Civil Aeronautics Board

Regulations

ER—160.....Effective May 1, 1951

Amends the Economic Regulations by establishing a new Part 207 which relates only to charter trips and special services in air transportation performed by certificated air carriers, other than Alaskan carriers.

ER—161.....Effective April 2, 1951

Extends from April 6, 1951, to May 6, 1951, the effective date of Amendment No. 1 to Part 291, with respect to operational limitations on exercise of temporary exemption by Large Irregular Carriers.

PR—10.....Effective March 30, 1951

Makes and promulgates a new Part 300 setting forth the principles of practice of the Civil Aeronautics Board.

Amdt. 61—4.....Effective May 15, 1951

Amends Part 61, § 61.294 and adds § 61.294a to permit a pilot of aircraft having four or more engines to exercise discretionary authority to make immediate landing or to proceed to an airport of his own selection under stated conditions of mechanical failure or interruption which may involve safety of the flight.

Safety Orders

S—399 vacates examiner's initial decision of October 13, 1950, and remands the proceeding to the examiner for further hearing upon request of John H. Greene, not less than 90 days from date of this order, to receive any additional proof which he may care to submit as to his qualifications for a medical certificate (March 23).

S—400 opinion and order modify finding No. 3 of the examiner's initial decision in the matter of the complaint of the Administrator of Civil Aeronautics against B. S. Nadiak; suspends airline transport pilot certificate of Respondent for 5 days commencing on April 6, 1951; otherwise affirms examiner's findings (March 28).

S—401 revokes nonscheduled air carrier operating certificate of Virgin Islands Air Service, Inc. (March 28).

S—402 stays, effective immediately and until further order of the Board, order serial No. S—400 which suspends for 5 days the airline transport certificate of B. S. Nadiak (April 5).

S—403 modifies the examiner's order of suspension dated December 11, 1950, so as to enable James A. Barnes, Jr., if otherwise qualified, to pilot aircraft for hire in the employ of Norman L. Chase, Farm Air Service, Beaumont, Texas, for the purpose of planting, fertilizing, spraying and dusting rice crops (April 9).

S—404 denies petition of Albert Paul Criner for modification of the examiner's order revoking his airman certificate for a period of one year (April 12).

S—405 modifies examiner's order so as to delete any fixed period for termination of the revocation of the pilot certificate of Thomas E. Stancil, Jr. (April 12).

Airline Orders

E—5154 grants certain petitioners leave to intervene in the *North Central Route Investigation* case (February 28).

E—5155 institutes investigation, suspends and defers use from March 1, 1951, of certain charter rates for Speedpak units and other provisions proposed by Chicago and Southern Air Lines, insofar as applicable between points in the United States (February 28).

E—5156 severs proceeding concerning the establishment of final mail rates for Colonial Airlines for the periods April 21, 1948—March 13, 1950, and April 1, 1950—December 31, 1951, from that concerning establishment of final mail rates on and after January 1, 1952, over its Bermuda routes (March 1).

E—5157 amends order serial No. E—4541 so as to approve the interlocking relationship existing as the result of the holding by A. E. Ulmann of the positions of director and vice president of Metropolitan Air Commuting, Inc., and president, director, and controlling stockholder of A. E. Ulmann and Associates, Ltd. (March 1).

E—5158 dismisses applications of Delta Air Lines in the matter of the amendment of its certificates for routes Nos. 24 and 54 (March 2).

E—5159 authorizes Frontier Airlines to suspend service at Canon City, Colorado, and Provo, Utah, until 60 days after final determination of the Board in the *Frontier Renewal Proceeding, Docket No. 4340*, et al.; otherwise denies (March 2).

E—5160 grants Northern Consolidated Airlines leave to intervene in the matter of the suspension of the certificate of Pan American World Airways for its route between Bethel and Fairbanks, Alaska, via various intermediate points.

E—5161 grants Standard Air Cargo exemption for 2 years, subject to stated terms, conditions, and limitations, from the provisions of sections 401 (a), 404 (a), and 405 (c) of the Act so as to permit it to engage in certain irregular air transportation; terminates temporary exemption granted by Part 291; otherwise denies (March 5).

E—5162 grants Eastern Air Lines and the Mansfield Chamber of Commerce leave to intervene in the *Indiana-Ohio Local Service* case (March 3).

E—5163 authorizes Ozark Airlines to suspend service at Miami, Oklahoma, until April 10, 1951 (March 5).

E—5164 approves Agreement C. A. B. No. 4838 as amended by Agreement C. A. B. No. 4838-A, subject to stated terms and conditions, between Trans-Caribbean Air Cargo Lines and various other air carriers relating to the establishment of the Independent Military Air Transport Association (March 2).

E—5166 exempts, for 6 months, all Large Irregular Carriers and Irregular Transport Carriers from the provisions of section 401(a) of the Act and Part 291 of their individual exemption orders to the extent necessary to permit them to engage in certain interstate, overseas, or foreign air transportation pursuant to contract with any department of the Military Establishment, subject to stated limitations (March 6).

E—5167 fixes and determines final mail rates for Colonial Airlines over its Bermuda routes (March 6).

E—5168 denies petition of Northern Cargo Association for reconsideration of certain opinions and orders in Investigation of Accumulation, Assembly and Distribution Rules (March 7).

E—5169 terminated exemption granted Northwest Airlines from the provisions of section 401 (a) of the Act and its certificate for route No. 3 by order serial No. E—4536, as amended by E—5026 (March 7).

E—5170 denies petition of Strato-Freight for reconsideration and hearing in the matter of its application for an exemption; revokes, effective April 6, 1951, temporary exemption granted by section 291.16 (March 7).

E—5171 revokes, effective April 20, 1951, Letter of Registration No. 142 issued to Oxnard Sky Freight, and orders it to cease and desist from engaging in air transportation (March 5).

E—5172 opinion and order grant permit to Compania Dominicana de Aviacion, C. Por A., authorizing it to engage in foreign air transportation with respect to persons, property, and mail between terminal points Ciudad Trujillo, Dominican Republic, and Miami, Florida, and San Juan, Puerto Rico. Approved by the President March 6, 1951 (February 13).

E—5173 grants the Department of Interior and the Post Office Department leave to intervene in the matter of the application of Lawrence M. Coleman d/b/a Samoan Airlines for a certificate (March 8).

E—5174 dismissed the application of Trans-Air Hawaii for a certificate (March 8).

E—5175 rescinds ordering paragraphs 1 and 2 (c) of order serial No. E—4601 and cancels docket No. 4657 in the matter of the application of Mid-Continent Airlines for an amendment of its certificate for route No. 80 (March 8).

E—5176 orders Cordova Air Service to show cause why the Board should not fix certain temporary mail rates over its routes certificated for the transportation of mail (March 8).

E—5177 dismisses petition of Air America for declaratory order on Part 291 of the Board's Economic Regulations (March 8).

E—5178 exempts, with stated conditions, The Flying Tiger Line for 6 months from January 12, 1951, from the provisions of section 401 (a) of the Act so as to permit it to engage in interstate, overseas, and foreign air transportation of persons and property pursuant to contracts with any department of the Military Establishment; otherwise denies (March 8).

E—5179 grants exemption until March 19, 1951, to Capitol Airways from the provisions of section 401 of the Act so as to permit it to operate one round-trip flight between stated points, carrying students of the Wentworth Military Academy, Kansas City, Mo. (March 5).

E—5180 dismisses proceeding of investigation and suspension instituted by order serial No. E—4972 in the matter of the complaint of Pacific Coast Garment Manufacturers relating to the cancellation of certain rates on wearing apparel proposed by American Airlines (March 9).

E—5181 dismisses application of Conchita Tormos Rivera, d/b/a Nu-Wau Air Express, for termination of the Letter of Registration No. 1197, in the matter of the suspension of Letters of Registration of certain Noncertificated Irregular Air Carriers (March 9).

E—5182 dismisses complaint of United Air Lines with respect to joint fares proposed by Northwest Airlines and Western Air Lines between Chicago, Ill., and San Francisco, Calif., via Seattle, Wash., Tariff No. PF-4, C.A.B. No. 18 (March 9).

E—5183 denies application of Trans-Alaskan Airlines for an exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption; denies requests of various air carriers (March 9).

E—5184 denies application of Trans World Airlines for an exemption from the enforcement of section 401 of the Act so as to permit it to engage in foreign air transportation of persons, property and mail between designated points in the United States and the Azores (March 12).

E—5185 fixes and determines final mail rates for Piedmont Aviation over its entire system (March 12).

E—5186 denies motion of Aerovias Sud Americana in the *Latin American Air Freight* case; orders that Exhibit ASA—64 be excluded from the record and returned to Aerovias unopened and without disclosure of its contents (March 12).

E—5187 dismisses application of Southern Airways for a certificate (March 12).

E—5188 dismisses applications of Capital Airlines and National Airlines for a certificate (March 12).

E—5189 authorizes Frontier Airlines to omit stops at Vernal, Utah, on all flights requiring landings at the Vernal Airport during the hours of darkness from February 7, 1951, until such time as adequate lighting facilities are provided; amends order serial No. E—4686; otherwise denies (March 12).

E—5190 amends certificate of United Air Lines for route No. 1 so as to include Redmond, Oregon, as a co-intermediate point thereon with Bend, Oregon (March 12).

E—5191 permits Pan American World Airways to inaugurate non-stop service March 9, 1951, between New York, N. Y., and Glasgow, Scotland (March 12).

E—5192 grants Robert C. Reeve, d/b/a Reeve Airways, exemption from the provisions of section 401 (a) of the Act and Part 292, insofar as they would otherwise prevent it from engaging in interstate air transportation of persons and property within the Territory of Alaska, without limitation as to regularity and frequency of service, pursuant to military contracts or requirements (March 12).

E—5193 amends order serial No. E—4204 exempting The Flying Tiger Line from the provisions of section 401 (a) of the Act so as to permit it to transport accompanying personnel in connection with the movement of property for the armed forces or any agency of the United States Government or contractors, subject to stated provisions (March 12).

E—5194 dismisses complaint of Chicago and Southern Air Lines with respect to fare reductions between Memphis, Tenn., and Paducah, Ky., proposed by Ozark Airlines (March 13).

E—5195 denies Monarch Air Service exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption; denies requests of various air carriers (March 13).

E—5196 denies Coastal Air Lines exemption which would permit it to engage in certain air transportation as authorized by Part 291; terminates temporary exemption; denies requests of various air carriers (March 13).

E—5197 approves application of Southern Airways for a loan from the Reconstruction Finance Corporation; issues certificate under section 4 (a) (1) of the RFC Act as amended (March 13).

E—5198 grants Wien Alaska Airlines exemption from the provisions of section 401 (a) of the Act, for 60 days from the date of final decision by the Board on Wien's application for certificate amendment, so as to permit it to engage in air transportation of persons, property, and mail between Beetles and Anaktubuk, Alaska (March 15).

E—5199 amends subparagraphs (b) and (c) of paragraph 1 of the directory portion of order Serial No. E—2480 in the matter of a proceeding to determine whether public convenience and necessity require elimination of certain uneconomic competitive service between Chicago, Ill., and Washington, D. C., and the establishment of through air transportation between Washington, D. C., and points west of Chicago by means of interchange arrangements; except as granted, denies motions of various air lines (March 15).

E—5200 permits Trans-Texas Airways to inaugurate service April 6, 1951, at Tyler, Texas, on route No. 82, through use of Pounds Field (March 16).

Regulations of The Administrator

Through May 1, 1951

Note: Regulations of the Administrator marked with an asterisk (*) on the list given below may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington 25, D. C., at the prices indicated. Remit check or money order, made payable to the Superintendent of Documents, directly to the Government Printing Office. Copies of amendments may be obtained free of charge from the Office of Aviation Information, CAA, Washington 25, D. C., or may be found in the Federal Register for the dates indicated in parentheses. Copies of the Federal Register are obtainable from the Superintendent of Documents.

Organization

Part 400—Organization and Functions. (10¢.)

Procedures

*Part 405—General Procedures. (5¢.)
*Part 406—Certification Procedures. (10¢.)
*Part 407—Recordation Procedures. (5¢.)
*Part 408—Enforcement Procedures. (5¢.)
Amendment 1. (April 26, 1951.)

Rules

Airmen

*Part 450—Inter-American Aviation Training Grants. (5¢.)

Aircraft

Part 501—Aircraft Registration Certificates. (April 28, 1951.)
*Part 502—Dealers' Aircraft Registration Certificates. (5¢.)
*Part 503—Recordation of Aircraft Ownership. (5¢.)
*Part 504—Recordation of Encumbrances Against Specifically Identified Aircraft Engines. (5¢.)
*Part 505—Recordation of Encumbrances Against Aircraft Engines, Propellers, Appliances, or Spare Parts. (5¢.)
Part 506—Airworthiness Directive Recordation. (May 1, 1951.)
Part 514—Technical Standard Orders — C Series — Aircraft Components. (January 25, 1951.)

Airports

*Part 550—Federal Aid to Public Agencies for Development of Public Airports. (10¢.)
(Amendments 1-14 available from CAA.)
*Part 555—Acquisition of Government-owned Lands for Public Airport Purposes. (5¢.)
*Part 560—Reimbursement for Damage to Public Airports by Federal Agencies. (10¢.)
(Amendment 1 available from CAA.)
*Part 570—Rules of Washington National Airport. (5¢.)
(Amendment 1 available from CAA.) Amendment 2 (March 28, 1951).
*Part 575—Federal Civil Airports on Canton and Wake Islands. (5¢.)

Air Navigation

*Part 600—Designation of Civil Airways (including amendments 1 through 18). (15¢.)
(Amendments 19-47 available from CAA.)
*Part 601—Designation of Control Areas, Control Zones and Reporting Points (including amendments 1 through 22). (15¢.)
(Amendments 23-50 available from CAA.)
*Part 612—Aeronautical Fixed Communications. (5¢.)
Part 617—Airport Traffic Control Rules. (April 21, 1951.)
*Part 620—Security Control of Air Traffic. (5¢.)
Amendment 1 (February 15, 1951).
*Part 625—Notice of Construction or Alteration. (5¢.)

Miscellaneous

Part 635—Reproduction and Dissemination of Current Examination Materials. (Available without charge from CAA.)

Suspensions and Revocations

Recent initial decisions by Civil Aeronautics Board examiners suspending or revoking certificates include the following:

Suspensions

Private pilot certificate of William Earl Browning, Mishawaka, Ind., suspended 60 days from December 31. The pilot took off from the County Line Airport, Elkhart, Ind., with two passengers in the rear seat—a 9-year-old boy sitting on his father's lap. After the aircraft became airborne the fuel pressure was indicated as being low and the engine cut out and died when the selector was switched to the other tank. The aircraft crashed when an attempt was made to make an emergency landing in a nearby field.

Private pilot certificate of Herman C. Cassell, Burkburnett, Texas, suspended 3 months from October 6 for low flying and for performing acrobatics at a low altitude over the congested area of Burkburnett.

Private pilot certificate of Godfrey T. Roach, New Orleans, La., suspended 3 months from December 21 for low flying over the New Orleans Country Club, New Orleans.

Private pilot certificate of James O. McMeans, Center, Texas, suspended 4 months from December 16 for performing acrobatics at a low altitude. Shortly after take-off and while at an altitude of 200 to 300 feet from the ground, the pilot made a steep climb and attempted a wing-over. During the wing-over the aircraft stalled and mushed to the ground, damaging the landing gear and propeller.

Private pilot certificate of Edwin V. Mortimer, Liberal, Kans., suspended until July 21 and until he has passed a written examination and a flight test appropriate to the private pilot rating. The pilot operated an aircraft carrying two passengers when the aircraft was equipped with a seat and safety belt for one and failed to have in his possession medical and aircraft registration certificates.

Aircraft and engine mechanic certificate of H. E. McCaulley, Pueblo, Colo., suspended 45 days from December 15 for signing an engine log book, indicating that he had completed an overhaul and that the engine was in airworthy condition, when in fact the work was done by another not under his direct supervision and inferior materials were used in the repair.

Commercial pilot certificate of Joseph C. Cheney, II, Sun Valley, Calif., suspended 12 months from December 3 for operating a large aircraft in interstate air transportation when he had not been issued an air carrier operating certificate, had not filed flight plans for the flights on which he was pilot in command, and acted as pilot in command when he did not possess an airline transport pilot rating.

Private pilot certificate of Pearley Childers, Jr., Moscow, Idaho, suspended 90 days from December 16 for flying in close proximity to another aircraft in the vicinity of the Pullman-Moscow Airport, Moscow, and for flying at a dangerously low altitude over farmers working in a field near the airport.

Commercial pilot certificate of Edwin L. Shellabarger, Skwenta, Alaska, suspended 7 days from September 30 for operating an aircraft after installing skis that had not been approved for that type aircraft.

Private pilot certificate of George Barnd, Indianapolis, Ind., suspended 6 months from September 30 for performing acrobatic maneuvers at a low altitude within a control zone and over a congested area in the vicinity of Stout Field, Indianapolis.

Private pilot certificate of Donald E. Marney, Detroit, Michigan, suspended 6 months from October 31 for failing to conform to the traffic pattern for the Municipal Airport, Centerville, Iowa, and for low flying over the congested area of Centerville.

Private pilot certificate of James Hartman, Arroyo Grande, Calif., suspended 12 months from December 8, with the further provision that he pass a written examination on Parts 43 and 60 of the Civil Air Regulations. The pilot, after taxiing an aircraft onto a runway on the Kirkland Air Force Base, Albuquerque, New Mexico, contrary to the instructions of the traffic control, took off from the runway when requested by traffic control to hold his position.

Revocations

Student pilot certificate of Anthony J. Scarlata, Albany, N. Y., revoked for operating an aircraft in the vicinity of Slingerlands, N. Y., while carrying a passenger.

Student pilot certificate of John W. McMunigal, Chester, Pa., revoked for low flying in the vicinity of Ocean Beach, N. J. The pilot dived the aircraft at houses along the beach at an altitude so low as to barely clear overhead wires and flew at an altitude of approximately 30 feet above the water adjacent to the beach.

Private pilot certificate of Charles B. Cramton, Opa Locka, Fla., revoked for authorizing a non-certificated airman to operate aircraft between Florida and Cuba and violating the immigration laws of the United States by transporting and assisting in the transportation of immigrants illegally into the United States.

Private pilot certificate of Max G. Kroll, Jr., St. Paul, Minn., revoked for low flying in the vicinity of Ham Lake, Johnsville, Minn., for performing acrobatics at a low altitude and for performing acrobatics when neither he nor his passenger were equipped with parachutes.

Private pilot certificate of Richard E. Beaubien, Birmingham, Mich., revoked for failure to present himself for re-examination.

Student pilot certificate of Donald M. Carlson, Minneapolis, Minn., revoked for operating an aircraft in a careless and reckless manner by diving toward occupied boats on Ham Lake, Johnsville, Minn.

Private pilot certificate of Arthur J. Prudhomme, Wyandotte, Mich., revoked for failure to surrender his airman certificate when requested.

Commercial pilot certificate of James Lazar, Cleveland, Ohio, revoked for operating an aircraft in a careless and reckless manner by repeatedly buzzing a large sailboat operating on Lake Erie.

Private pilot certificate of James A. Murphy, Mauriceville, Texas, revoked for low flying over a farm in the vicinity of Mauriceville and for performing acrobatic maneuvers while carrying a passenger when neither were equipped with a parachute. While pulling out of a spin the aircraft stalled, one wing dropped striking some trees and the aircraft crashed. Both the pilot and passenger were seriously injured and the aircraft demolished.

Private pilot certificate of Richard C. Shatzer, Albuquerque, N. Mex., revoked for careless and reckless operation of an aircraft by failure to observe the operation limitations of the aircraft. The pilot, while carrying three passengers, attempted a take-off from a short strip located near Penasco, New Mex., at an altitude of approximately 7500 feet above sea level. The aircraft failed to become airborne and crashed into rocks and trees at the end of the runway.

Private pilot certificate of Travis D. Reed, Westville, Okla., revoked for operating an aircraft as low as 100 feet from the ground over the congested area of Westville. On his second pass over the town, the pilot descended to such a low altitude that one wing of the aircraft struck a tree and the aircraft crashed to the ground.

Student pilot certificate of John B. Huss, Boone, Iowa, revoked for operating an aircraft carrying a passenger.

Student pilot certificate of Wendell H. Woodworth, Nashua, Iowa, revoked for operating an aircraft in the vicinity of Nashua while carrying a passenger.

Private pilot certificate of Vernon C. Dufton, Pacoima, Calif., revoked for low flying and performing acrobatics at a low altitude in the vicinity of Muroc, Calif.

Scheduled Air Carrier Operations

[Source: CAB Form 41]

Domestic: January 1951

Operator	Revenue miles	Revenue passengers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown		
						Express	Freight	United States mail
Trunk Lines								
American Airlines	5,237,167	319,780	163,861	224,997	72.83	812,279	2,793,767	1,063,921
Braniff Airways	957,047	58,601	20,185	33,789	59.74	101,996	153,674	124,373
Capital Airlines	1,708,991	111,295	33,924	64,190	52.85	191,019	388,349	131,965
Chicago & Southern Air Lines	623,842	29,296	10,941	17,972	60.88	59,738	57,215	48,485
Colonial Airlines	284,412	15,829	4,060	8,359	48.57	7,573	7,534	8,511
Continental Air Lines	521,011	18,813	6,948	15,053	46.16	11,011	50,915	18,080
Delta Air Lines	1,401,173	64,249	32,333	51,711	62.53	99,163	319,510	130,635
Eastern Air Lines	4,944,681	268,040	137,030	220,348	62.19	515,688	423,102	461,021
Inland Air Lines	246,140	7,766	3,006	5,930	50.69	6,940	8,973	15,098
Mid-Continent Airlines	650,281	30,078	9,119	16,295	55.96	19,515	41,887	29,570
National Airlines	1,291,122	49,067	34,659	55,780	62.14	50,417	371,486	73,554
Northeast Airlines	315,502	26,674	4,983	9,753	51.09	20,132	15,412	10,292
Northwest Airlines	1,292,876	44,255	29,600	63,861	46.35	190,924	437,111	208,971
Trans World Airlines	3,902,543	136,484	98,283	154,403	63.65	733,445	1,202,706	862,378
United Air Lines	4,375,975	197,549	117,541	171,378	68.59	966,794	2,114,089	1,194,390
Western Air Lines	692,312	43,412	15,690	27,362	57.34	32,123	53,445	83,077
Trunk total	28,445,075	1,421,188	722,163	1,141,181	63.28	3,818,757	8,439,175	4,463,421
Feeder Lines								
All American Airways	228,516	10,579	1,439	4,799	29.99	12,171	0	3,461
Bonanza Air Lines	73,591	1,971	502	1,504	33.38	186	708	377
Central Airlines	116,199	1,329	241	1,792	13.45	0	0	1,414
Empire Air Lines	103,856	3,217	580	2,181	26.59	1,480	0	1,987
Frontier Airlines	359,824	6,320	1,606	7,196	22.32	4,932	14,230	7,521
Helicopter Air Service	25,245	0	0	0	—	0	0	1,600
Lake Central Airlines	82,228	1,489	250	914	27.35	10,013	0	811
La Angeles Airways	30,699	0	0	0	—	0	0	4,200
Mid-Continent Airlines	80,436	3,033	611	1,689	36.18	3,237	1,763	1,395
Mid-West Airlines	71,067	251	31	285	10.88	0	0	670
Ozark Airlines	87,448	1,900	236	1,248	18.91	5,423	0	959
Piedmont Aviation	289,403	10,341	2,415	6,078	39.73	7,483	8,654	4,091
Pioneer Air Lines	295,080	11,215	2,993	7,082	42.26	3,770	9,707	8,003
Robinson Airlines	98,560	5,151	783	1,918	40.82	5,118	2,854	1,873
Southern Airways	202,646	4,829	881	4,203	20.96	4,147	0	6,097
Southwest Airways	191,237	8,663	1,658	4,016	41.28	2,897	10,319	3,636
Trans-Texas Airways	221,280	5,507	1,342	4,647	28.88	2,409	4,546	3,043
West Coast Airlines	89,021	3,474	484	1,869	25.90	731	1,905	489
Wiggins, E. W., Airways	56,252	275	25	224	11.16	0	0	115
Wisconsin-Central Airlines	151,444	3,405	531	1,212	43.81	3,244	0	2,624
Feeder total	2,854,032	82,949	16,608	52,857	31.42	67,241	54,686	54,366
Territorial Lines								
Caribbean-Atlantic Airlines	49,075	7,970	602	1,335	45.09	0	2,383	800
Hawaiian Airlines	251,319	24,761	3,225	5,455	59.12	8,079	53,340	3,137
Territorial total	300,394	32,731	3,827	6,790	56.36	8,079	55,723	3,937
Grand Total	31,599,501	1,536,868	742,598	1,200,828	61.84	3,894,077	8,549,584	4,521,724

International and Overseas: January 1951

Operator	Revenue miles	Revenue passengers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown			
						Express	Freight	United States mail	Parcel post
American Airlines	239,567	9,560	7,402	13,083	56.58	972	128,508	13,041	0
Braniff Airways	265,725	2,036	3,986	11,338	35.16	0	96,880	9,800	0
Chicago & Southern Air Lines	136,533	2,383	2,393	6,258	38.24	0	44,584	2,557	221
Colonial Airlines	51,120	1,967	1,557	2,658	58.58	0	3,120	879	182
Eastern Air Lines	64,480	1,930	2,007	3,869	51.87	0	12,502	7,514	0
National Airlines	123,791	10,549	2,756	6,866	40.14	3,748	19,424	1,006	0
Northwest Airlines	490,067	4,772	8,527	18,666	45.68	14,366	486,552	155,782	0
Pan American World Airways:									
Atlantic Division	1,149,146	20,741	28,256	44,855	62.99	811,357	0	291,609	69,985
Latin American Division	2,241,050	63,882	52,497	81,730	64.23	1,820,123	0	249,529	0
Alaska Operations	169,552	2,788	3,023	7,751	39.00	235,700	0	28,211	0
Pacific Operations	753,062	5,278	17,358	35,966	48.26	443,751	0	435,570	0
Pan American-Grace Airways	490,037	8,858	9,048	17,728	51.04	145,846	0	26,126	5,378
Trans World Airlines	939,293	6,703	18,546	41,776	44.39	0	483,232	274,683	42,350
United Air Lines	259,310	2,679	6,616	13,221	50.04	0	37,578	62,199	0
Uraba, Medellin & Central Airways									
Total [1]	7,373,733	144,126	163,972	305,765	53.63	3,475,863	1,312,380	1,558,506	118,116

[1] Totals do not include Uraba, Medellin & Central Airways.

Scheduled Air Carrier Operations

(Continued from page 54)

Domestic: February 1951

Operator	Revenue miles	Revenue passengers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown		
						Express	Freight	United States mail
Trunk Lines								
American Airlines	4,686,907	293,116	146,477	197,798	74.05	866,011	3,096,809	1,147,920
Braniff Airways	868,961	54,301	18,093	30,414	59.49	110,429	142,435	131,732
Capital Airlines	1,518,235	104,321	32,162	57,453	55.98	226,827	399,794	160,868
Chicago & Southern Air Lines	585,227	28,660	10,407	16,745	62.15	63,048	69,346	55,956
Colonial Airlines	253,362	16,071	4,180	7,446	56.14	8,276	9,890	8,722
Continental Air Lines	461,151	17,172	6,246	13,315	46.91	11,477	51,020	22,074
Delta Air Lines	1,299,194	61,364	31,034	47,893	64.80	123,878	370,410	149,646
Eastern Air Lines	4,682,146	266,880	138,163	210,827	65.53	600,919	439,171	483,766
Inland Air Lines	217,447	6,478	2,523	5,187	48.64	7,524	14,488	17,611
Mid-Continent Airlines	553,097	25,542	7,657	13,813	55.43	24,684	45,042	32,964
National Airlines	1,271,097	53,373	39,218	54,390	72.11	38,479	473,308	88,695
Northeast Airlines	300,854	29,099	5,421	9,325	58.13	18,688	19,543	13,243
Northwest Airlines	743,560	30,078	19,824	38,842	51.04	184,631	322,996	160,403
Trans World Airlines	3,344,449	116,475	82,926	131,785	62.93	804,592	1,312,423	893,263
United Air Lines	3,904,436	178,410	104,239	151,603	68.76	1,065,728	2,069,754	1,247,518
Western Air Lines	626,018	42,353	15,197	24,823	61.22	38,062	57,334	89,468
Trunk total	25,316,141	1,323,693	663,767	1,011,659	65.61	4,193,253	8,893,763	4,703,849
Feeder Lines								
All American Airways	203,066	10,266	1,456	4,264	34.15	13,467	0	4,110
Bonanza Air Lines	70,754	2,326	601	1,453	41.36	158	810	387
Central Airlines	106,104	1,136	200	1,687	11.86	0	0	1,624
Empire Air Lines	95,813	3,256	566	2,012	28.13	1,190	0	1,918
Frontier Airlines	335,327	6,363	1,574	6,707	23.47	4,788	15,953	8,352
Helicopter Air Service	21,943	0	0	0	—	0	0	1,866
Lake Central Airlines	73,163	1,313	212	1,608	13.18	11,868	0	2,094
Los Angeles Airways	24,777	0	0	0	—	0	0	3,572
Mid-Continent Airlines	66,599	2,457	474	1,399	33.88	5,893	5,226	1,433
Mid-West Airlines	51,560	145	19	207	9.18	0	0	529
Ozark Airlines	71,078	1,509	215	1,124	19.13	4,609	0	898
Piedmont Aviation	269,489	9,643	2,214	5,659	39.12	8,351	10,222	4,895
Pioneer Air Lines	264,538	10,323	2,708	6,349	42.65	4,123	11,019	8,458
Robinson Airlines	94,499	5,571	868	1,875	46.29	5,366	3,838	2,106
Southern Airways	197,764	5,442	980	4,137	23.69	5,361	0	6,713
Southwest Airways	181,016	9,132	1,758	3,812	46.12	3,466	19,143	4,133
Trans-Texas Airways	204,657	4,489	1,100	4,298	25.59	2,436	5,595	2,948
West Coast Airlines	83,592	3,488	502	1,755	28.60	819	4,505	515
Wiggins, E. W., Airways	44,242	283	26	177	14.69	0	0	100
Wisconsin-Central Airlines	122,130	2,597	397	949	41.83	4,134	0	3,525
Feeder total	2,582,111	79,739	15,870	49,472	32.08	76,029	76,311	60,176
Territorial Lines								
Caribbean-Atlantic Airlines	51,489	8,960	706	1,390	50.79	0	2,098	661
Hawaiian Airlines	210,794	22,379	2,853	4,566	62.48	8,116	45,485	3,219
Territorial total	262,283	31,339	3,559	5,956	59.75	8,116	47,583	3,880
Grand Total	28,160,535	1,434,771	683,196	1,067,087	64.02	4,277,398	9,017,657	4,767,905

International and Overseas: February 1951

Operator	Revenue miles	Revenue passengers	Revenue passenger miles (000)	Passenger seat miles (000)	Revenue passenger load factor (percent)	Ton-miles flown			
						Express	Freight	United States mail	Parcel post
American Airlines	225,496	9,724	7,766	11,667	66.56	909	63,066	12,461	0
Braniff Airways	240,138	2,283	4,521	10,215	44.26	0	79,113	12,845	0
Chicago & Southern Air Lines	129,084	2,639	2,756	5,858	47.05	0	48,388	2,743	193
Colonial Airlines	45,310	2,347	1,865	2,356	79.16	0	4,008	957	117
Eastern Air Lines	58,240	1,654	1,720	3,494	49.23	0	10,794	8,849	0
National Airlines	110,879	11,733	2,991	6,006	49.80	974	22,005	828	0
Northwest Airlines	450,341	4,011	7,297	15,504	47.07	12,366	480,390	130,859	0
Pan American World Airways:									
Atlantic Division	980,431	20,749	26,903	45,502	59.12	761,544	0	276,433	75,070
Latin American Division									
Alaska Operations	164,479	2,235	2,374	7,472	31.77	291,539	0	29,958	0
Pacific Operations	669,984	5,161	17,301	32,177	53.77	445,801	0	406,195	0
Pan American-Grace Airways	440,957	9,895	10,990	16,174	67.95	137,756	0	25,247	5,004
Trans World Airlines	864,397	7,050	18,917	38,700	48.88	0	488,955	257,164	38,788
United Air Lines	233,138		5,998	11,692	51.30	0	45,124	66,781	0
Uraba, Medellin & Central Airways									
Total [1]	4,612,874	81,923	111,399	206,817	53.86	1,650,889	1,241,843	1,231,320	119,172

[1] Totals do not include Latin American Division and Uraba, Medellin & Central Airways.

Domestic Passenger Miles Flown (Total Revenue and Nonrevenue, in Thousands)

	January	February	Total
Trunk	744,984	689,234	1,434,218
Feeder	18,080	17,205	35,285
Territorial	3,886	3,613	7,499
Total	766,950	710,052	1,477,002

Civil Aviation Highlights

	1951	1950
Airports and airfields recorded with CAA, *April 1*	6,346	6,469
By type: [1]		
Commercial	2,243	2,532
Municipal	2,288	2,212
CAA Intermediate	71	135
Military	324	343
All others	1,420	1,247
a. Private use	1,261	1,106
b. Miscellaneous government	159	141
Civil airports and airfields by class: [2]		
Total	6,022	6,126
Class I and under	3,958	4,046
Class II	959	987
Class III	512	502
Class IV	373	375
Class V	138	137
Class VI and over	82	79
Total U. S. civil aircraft, *April 1*	91,753	92,629
Scheduled air carrier aircraft, *April 1*	1,221	1,141
Civil aircraft production, *February*		
Total	239	225
1- and 2-place models	30	57
3-, 4-, and 5-place models	209	160
Over 5-place models		8
Certificates approved, *February*		
Student pilots	2,272	2,848
Private pilots	1,355	1,568
Commercial pilots	312	350
Airline transport pilots	66	67
Mechanics (original certificates)	403	587
Ground instructors (original certificates)	44	108
Flight instructor ratings	82	126
Instrument ratings	106	94
Control tower operators	48	73
Traffic control activity, *February*		
Airport operations, CAA airport towers	1,110,376	1,087,130
Fix postings, CAA airway centers	1,070,528	902,815
Instrument approaches, CAA approach control towers	29,988	27,911
Airport Operations		
Washington National, *March*		
Scheduled air carrier:		
Passengers departing	98,159	51,648
Passengers arriving	95,061	50,769
Aircraft arrivals and departures	11,426	8,620
Other aircraft arrivals and departures	3,462	2,326
San Francisco Municipal, *February*		
Scheduled air carrier:		
Passengers departing	46,907	35,004
Passengers arriving	46,674	35,022
Aircraft arrival and departures	6,555	6,017
Other aircraft arrivals and departures	4,258	2,685
Oakland Municipal, *February*		
Scheduled air carrier:		
Passengers departing	7,925	3,127
Passengers arriving	7,474	3,045
Aircraft arrivals and departures	4,483	3,834
Other aircraft arrivals and departures	9,208	10,944
Miami International, *February*		
Scheduled air carrier:		
Passengers departing	88,397	73,522
Passengers arriving	88,983	74,639
Aircraft arrivals and departures	9,400	8,531
Other aircraft arrivals and departures	7,730	11,081
Los Angeles International, *February*		
Scheduled air carrier:		
Passengers departing	53,298	39,066
Passengers arriving	53,386	38,061
Aircraft arrivals and departures	7,193	7,300
Other aircraft arrivals and departures	4,810	4,365

[1] Airport type definitions: Commercial—Public use and public services, privately owned and operated. Municipal—Public use and public services, municipally owned and/or operated. CAA Intermediate—Public emergency use, no services, CAA operated. Military—Public restricted, military operated. All others—(a) Public emergency use only, no public services, privately owned for personal use; (b) Public emergency use only, no public services, Government-owned Forest Service, etc.

[2] The following is a break-down of paved airports and unpaved airfields by class of facility:

Class of Facility	Paved Airports	Unpaved Airfields	Totals
I and under	112	3,846	3,958
II	170	789	959
III	337	175	512
IV	335	38	373
V	131	7	138
VI and over	80	2	82
Totals	1,165	4,857	6,022

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CAA-Developed 'Farming' Plane Highly Versatile

Plans and specifications for the construction of the CAA-developed agricultural plane will be made available to qualified manufacturers after the plane is type-certificated, CAA officials report.

The CAA prototype represents the contributions of many manufacturers and the suggestions of many practical operators. While admitting that no one type of plane can do all the different jobs now performed in "farming from the air," experts say that the new plane shows remarkable versatility.

At the suggestion of several organizations, the Civil Aeronautics Administration early in 1950 undertook the development of a plane especially for dusting, spraying, seeding and fertilizing.

Before the end of the year, on December 1, 1950, the plane was being test flown at the Texas A. & M. College Personal Aircraft Research Center at College Station, Texas, where the contract for developing the prototype had been placed by CAA.

The National Flying Farmers Association proposed the development, on the basis of its experience with general spraying and dusting operations which, up to now, have been carried out in war-surplus planes and small personal planes converted for the purpose. The great growth of this type of flying interested both the flyer and the operator in production of a better plane, one designed especially for the purpose. The Department of Agriculture cooperated with the CAA.

Recommendations Listed.—Broad performance qualifications were listed originally by the operators, farmers and CAA safety agents concerned with agricultural flying. The ideal agricultural plane, they said, should be able to spread its load at a low speed, should be safe to fly at a very low altitude, be able to zoom quickly at the end of a run to climb over obstacles at the edge of the field, have excellent maneuverability in turns in order to save time, good vision for the pilot, easy loading facilities and have a number of important safety features. The plane should be rugged and designed to give long life with minimum maintenance of the sort that can be carried on in the field.

Twelve manufacturers contributed significant items to the new plane, and the Cornell University Medical College assisted materially in assuring pilot protection. The manufacturers and their contributions are: Beech Aircraft Corporation, rudder pedals and brake equipment; Continental Motors Corporation, engine; Cessna Aircraft Corporation, landing gear and service; Aeronca Aircraft Corporation, engineering service; U. S. Rubber Company, tank liners; Goodyear Tire and Rubber Company, wheels, brakes and tires; McCauley Propeller Company, metal propeller; Koppers Company, aeromatic propeller; Safe Flight Instrument Company, pre-stall indicator; Vic Pastushin Industries, Inc., adjustable 40-G seat; American Seating Company, inertia reel for shoulder harness; and the Aircraft Conversion Company, instruments.

Specifications and Performance.—The specifications and performance characteristics of the new plane are:

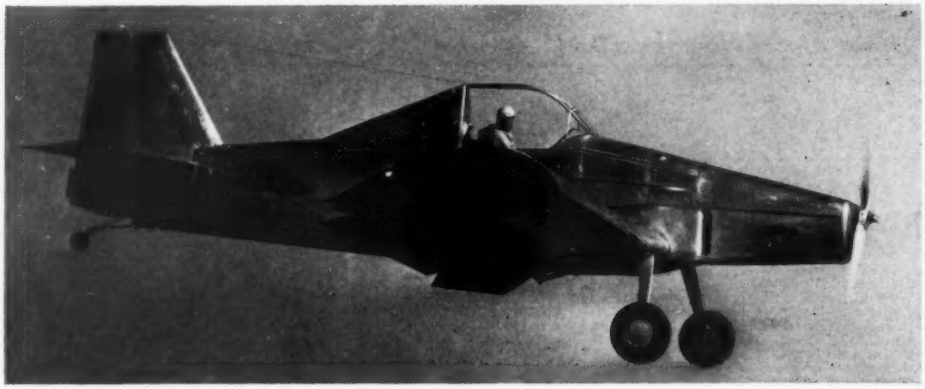
Type—Duster, sprayer, seeder, and fertilizer.

Performance (estimated full load)—Maximum speed, 115 mph; cruising speed, 100 mph; operating speeds, 60 to 90 mph; landing speed, 45 mph (normal landing without pay load, 37 mph); rate of climb, 600 fpm; service ceiling, 12,000 feet; cruising range, 400 miles; take-off distance to a height of 50 feet, 1300 feet.

Specifications—Wing span, 39 feet; length, 29 feet, 8 inches; height, 8 feet, 7 inches; empty weight, 1900 pounds; gross weight, 3400 pounds; fuel capacity, 48 gallons; low wing, all metal construction; landing gear tail wheel type; Cessna type spring steel gear support is shock absorber for both main and tail units; tire size main gear, 8.50 x 10, Goodyear tires, wheels, and hydraulic brakes; Scott 8-inch tail wheel, steerable, full swivel; Beach Bonanza rudder pedals; Continental E-225-104-14X engine; fuel consumption, 12 gph; McCauley one-piece aluminum alloy propeller.

New Features Included.—Noteworthy features of the prototype include full-span slotted flaps and slot-lip ailerons, permitting such performance and handling qualities necessary for dusting and spraying as: flying with heavy loads from unprepared fields, flying low over crops at relatively low speed, and climbing over obstacles and turning back quickly for the next pass; a 27-cubic-foot dust hopper in the fuselage and spray fluid tanks in the wing center panel holding a total of 150 gallons, either available for use at any time; provisions for experimental installation of any promising equipment for dusting and spraying. It also provides: room in outer wing panels for experimental dust hoppers to investigate possible improved distribution; simple construction for ease of maintenance and repair; exceptional field of view for the pilot; sharpened landing gear legs, guide tubes over the cockpit, and cable from the cockpit to the top of the fin, all for protection against electric wires contacted in flight; and pilot protection during a crash, including a 40-G seat, belt and shoulder harness, the latter supported by inertia reel giving the pilot freedom of action while protected.

Agricultural Plane Developed by the CAA



Planes like this will replace the present light planes converted for agricultural use. The pilot has exceptional forward and downward visibility and the tube structure above the cockpit protects him in the event of a nose over. The thick wings contain spray tanks and the wide flaps permit slow flying. The leading edge of the landing gear struts is sharpened so as to cut hidden fence wires. Simple construction permits field repairs.

'Aerial Farmers' to Boost Agricultural Production

Representatives of the Civil Aeronautics Administration and the Department of Agriculture are working together to put more planes in harness to help boost agricultural production this year.

Plans for an all-out aerial dusting and spraying campaign against noxious weeds and insect pests, discussed by experts of the two agencies in a 3-day conference in Washington, are being passed along to operators in the field by CAA agents.

Convened because of the need for substantial increases in production of essential foods and fibers, the conference included round-table discussions of operations planning, contract requirements, operational problems, pest control materials, protective measures, dispensing equipment, and services provided by agricultural agencies, the CAA, and the Civil Aeronautics Board. CAA agents from all continental regions attended for informal study of agricultural flying.

Research Results Available.—Operators should keep in touch with their local County agricultural agents to keep informed on the latest developments in the extensive research program of the Department of Agriculture in pest and weed control, CAA representatives were told.

"Conditions vary so much from state to state that it is difficult to prepare circulars or directives which would be good throughout the country," said the Administrator of Civil Aeronautics, in commenting on the conference. "A duster who has been killing weeds in the rice fields of California will meet different problems when he goes to the state of Washington to work with the fruit growers there, or hops over into Montana to fight grasshoppers.

"That's why it's so important to get information at the local level, from people who know local conditions. Valuable information is available at the State and Federal agricultural experiment stations. The State entomologist can help with special problems.

"Furthermore, the operators are overlooking an excellent source of information if they fail to visit the manufacturers and formulators of chemicals to learn what chemicals are available and what they can do."

Chief purpose of the conference was to give CAA people in the field and in Washington an outline of what the Department of Agriculture is doing in the way of experiments with chemicals and their application to control insects and weeds, so that this information can be passed along to operators who contact the CAA. The conference was arranged and conducted by the Office of Aviation Development and the Office of Aviation Safety.

Farm experts say that 1951 labor shortages will boost the demand for aerial dusting and spraying.

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